DOCUMENT RESUME

ED 037 132 FL 001 628

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TITLE The Language Laboratory.
PUB DATE 60
NOTE 8p.; Condensed from the Catholic Management Journal as reprinted in Annual Bulletin 19 of the Connecticut Audio-Visual Education Association, "Modern Techniques in Teaching Foreign Languages: Language Laboratories", p 49-56, 1960

EDRS PRICE EDRS Price MF-$0.25 HC-$0.50
DESCRIPTORS Audiolingual Methods, Class Management, *Colleges, Cost Effectiveness, Credit Courses, Credits, Equipment Maintenance, Financial Support, Instructional Materials, *Language Instruction, *Language Laboratories, *Language Laboratory Equipment, *Language Laboratory Use, Material Development, Second Language Learning, Tape Recordings, Teaching Techniques

ABSTRACT

Concepts pertaining to the language laboratory are clarified for the layman unfamiliar with recent educational developments in foreign language instruction. These include discussion of: (1) language laboratory components and functions, (2) techniques used in the laboratory, (3) new linguistic methods, (4) laboratory exercises, (5) traditional instructional methods, (6) costs and financing procedures, (7) maintenance problems, (8) class time distribution, (9) credit for laboratory periods, and (10) the recording of tapes. (RL)

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THE LANGUAGE LABORATORY

(Condensed from the *Catholic Management Journal*)

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AMERICAN COMPLACENCY and self-satisfaction, always considerable, received no doubt its worst shaking up when Russian scientists and engineers succeeded in putting an earth satellite into orbit before ours had been able to do so. The repercussions have been heard in every quarter of the country. But especially in the field of education, where there is a ground swell of demand for improvement of our schools and teaching methods.

The loudest cry is, of course, for more science and mathematics; but there is also a demand for more foreign languages. The general public is more and more coming to regard foreign language study as important for our times and to demand more results from the teaching of languages—even at the cost of higher tuitions, better pay for teachers, and more time devoted to the subject.

An increasing number of teachers of languages are now ready with an answer to this demand. Although their field has been absolutely the dean of inhabitant of the doldrums (having changed its methods only superficially in 1500 years), the past ten years have brought a profound revolution, little publicized outside of professional circles. The outward sign is now making its appearance here and there in schools all over the nation under the name of "the language laboratory."

As recently as five years ago, the question most discussed at conferences of language teachers was, "Should we have a language laboratory?" Today the question is, "How do we build and use the language laboratory?" This new facility is definitely on the march. Without doubt, before ten more years have passed, no high school, college, or university which hopes to be regarded as better than second-rate will be without it—regardless of whether or not the staff and administration are entirely convinced of its merits.

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What is a Language Laboratory?

In essentials, a language laboratory is simply a rather large room in which have been installed rows of semi-soundproof booths, in each of which a student can sit listening to and imitating aloud the recorded language he is studying.

The size of the laboratory, in terms of the number of booths, is quite variable. However, the name is not really properly applied unless there are enough booths to accommodate the *largest* language

class that is to be expected in the particular school. Experience shows that with anything less the laboratory can be used only on an optional basis and only with the students who least need it, and its distinctive techniques are not called for or used. Larger laboratories have the advantage that more than one language class can be handled in the same scheduled hour. The limitation here is the number of programs or channels which the equipment can send out at the same time. Equipment for handling more than three or four channels becomes electronically complex and more expensive to build.

The language laboratory developed out of the simultaneous-interpretation setup that was worked out for the Nuremberg trials, and later adapted by the United Nations. The original Nuremberg arrangement is still used at Georgetown University to train interpreters and simultaneous translators. However, as is so often the case, its derivative, the language laboratory, threatens to reach greater stature than its parent.

Technique of This Laboratory

In the original version, each laboratory booth was equipped with a tape recorder, earphones, and a multichannel listening device by which the student could tune in any one of several programs being played on other tape recorders at the central control station. When he had selected his proper lesson, the student would hear in his earphones model material recorded for him by his professors. In moments of silence left for the purpose, he would try to repeat the model, giving as exact an imitation as he was able, and recording it on the tape recorder in his booth. Later he would listen to the original again while playing back his recording, carefully noting discrepancies between the original and his version. These steps remain the basic operation of the language laboratory, although the mechanics of accomplishing these activities have been varied.

If there were no more to a language laboratory than this, one might be inclined to say it is hardly worth the expense. But setting aside the fact that there *is* much more, as we shall presently show, it still would be worth its cost. Consider, first, that the student can hear really authentic French, German, or whatever language is studied, spoken by native speakers with cultivated accents—even when his school cannot or will not afford a truly professional teacher who really speaks comprehensibly the language he teaches.

Consider, too, that the student is learning by ear rather than visually. He is learning to attach meaning to spoken syllables rather than to figures on a page. It is estimated that more than 90 per cent of what we learn nowadays is learned through sight, which puts linguistic study at a staggering disadvantage. In his isolation, the student's self-consciousness and reluctance to imitate aloud are

eliminated.[1] He hears himself as others hear him—an experience he has never had before—and is able to compare objectively his French or German with a native speaker's.

Whatever the exercises given him, each student works every minute of the period, instead of reciting for five minutes out of 50 once every two weeks. It is as if the teacher were drilling each student individually for one whole period. The tape recorder and booth setup multiplies the teacher by 20, 30, or 40. Moreover, it takes over that part of his task which is mere mechanical drill, leaving him more time in the classroom for the explanation of difficult problems. Now the teacher may use the class period for the introduction and explanation of new material and for discussion and clearing up of difficulties, because he refers exercise and drill—which really constitute the major part of language learning—to the laboratory where keenly engineered machines will do it with modern efficiency.

The language laboratory, then, would be a valuable new tool, even if it were to be used by teachers entirely satisfied with the methods they are now using and not planning any changes. It would enable them to do more efficiently many things they have always done. It makes possible more drill and practice, a desideratum on which all teachers of languages would undoubtedly agree. But, parallel with the development of language laboratories is the development of new methods of language teaching that are available to teachers interested in trying them, whether or not they have a laboratory at their disposal.

New Linguistic Methods

These new methods result from the application of scientific linguistics to the problems of teaching languages. The linguistic approach to teaching languages has been developing for about 25 years as linguistics has taken a more and more prominent position in the larger universities. Linguistic teaching methods have proved strikingly successful wherever their results have been observed. They have created a demand which has quite out-stripped what is available, although a few preliminary manuals of the principles of linguistics have appeared. The so-called "army method," which received considerable publicity and discussion during and after the recent war, was one linguistic method. Originally it consisted of bringing before a class an "informant"—a person who was a cultivated speaker of the language to be learned, but not necessarily otherwise qualified as a teacher—and a linguist, who used the informant as a storehouse of authentic data which he analyzed and explained for the class. Many a former G.I. remembers these classes and how much more they taught him than his high school language courses.

[1] Experience shows that six students seated around a table listening to a tape recorder on the table do not accomplish anywhere near as much as the same six students in semi-soundproof laboratory booths. The reason is probably the greater isolation and privacy of the latter.

The Laboratory Exercise

When the language laboratory appeared, the recorded tape took the place of the informant. The following formula was developed for laboratory exercises:

ENGLISH VOICE: The house.
INFORMANT: La casa. (Pause, during which student repeats.)
INFORMANT: La casa. (For correction of the student pronunciation; then pause again, during which the student repeats again.)
ENGLISH VOICE: Of my father.
INFORMANT: De mi padre. (Pause)
INFORMANT: De mi padre. (Pause)
ENGLISH VOICE: Is big.
INFORMANT: Es grande. (Pause)
INFORMANT: Es grande. (Pause)
ENGLISH VOICE: My father's house is large.
INFORMANT: La casa de mi padre es grande. (Pause)
INFORMANT: La casa de mi padre es grande. (Pause)

Although other linguistically oriented exercises have been devised since, almost all commercial recorded language courses now on the market follow this formula, except for one or two recorded more than 30 years ago.

Traditional Language Methods

Traditional methods of language teaching endeavored to ascertain the principles on which the language operated and to state these succinctly in the form of "rules," which the student was to commit to his conscious memory. It was assumed that once he understood and remembered all the rules, he would have a mastery of the language.

Given much constant application for a very long period of time, the traditional method can achieve success, once the governing principles through being applied hundreds of times have been established in the subconscious. However, in the United States, the time allotted to language study has been reduced to near the vanishing point.

The modern strategy, therefore, is to aim at the subconscious from the first: to build habits by the massive repetition of patterns embodying a linguistic principle, without necessarily ever stating the principle for conscious comprehension. The objective is the situation of the native speaker, in whom all rules of grammar are so thoroughly ingrained that he follows them with new or borrowed words and even when trying to speak other languages, although he might not without long reflection be able to state any rules. Indeed, many principles followed by native speakers have never yet been stated in any grammar.

Much more could be written about linguistic methods suitable to or facilitated by the laboratory. From the viewpoint of the administrator charged with the management of a school, however, the relevant questions about the language laboratory are not those of desirability and method, but of practicability and expense.

The Language Lab

In practice, it is desirable to have a few more booths than are needed to seat the largest language class that is to be expected. Thus, a school where language classes are not allowed to exceed 30 should construct 35 booths. When language classes run to more than 30 students, the languages are being badly taught, and so the larger laboratory they require is all the more necessary.

Here arises one problem faced by the administrator. Unless he happens to have on the staff of his language department a professor who has worked with one of the established laboratories or some expert electronics men in his physics or engineering departments, he has no one to guide him in choosing a firm of engineers and in deciding on the precise design of the laboratory, and the exact nature of the equipment to be ordered and installed. While the supplying engineers are generous with expert advice, they do, of course, have a vested interest. Therefore, many an administrator is reluctant to act as he weighs the expenditure of a substantial amount of funds (never too easy to come by) on a rather technical piece of equipment. Like the motorist buying a used car, he feels acutely the lack of an expert who is on *his* side.

At present, no one solution can be suggested for this serious problem. Simplest, perhaps, would be to hire a professor with language laboratory experience before building a laboratory. Failing this, it would seem justifiable to engage the director of an established laboratory as a consultant in the planning and contracting for a new installation.

Financial Outlay

Although the financial outlay required to build a language laboratory is substantial, it need not be a shattering blow if a laboratory fee is charged, as is customary in the sciences when expensive, special equipment is required. A fee of $5 to $10 per semester is not unreasonable. If 100 students register for a foreign language every year, there would be $1,000 to $2,000 each year with which to pay operational costs and amortize the original outlay, probably within ten years. Banks might lend the necessary sum if it could not be raised by a special fund drive. Actually, the fund drive would seem to have good prospects considering how many parents nowadays are anxious for their children to have better instruction in languages.

Operating Costs

What are the recurrent operational costs of a language laboratory? First, there is recording tape and accessories, which may well run to $500 a year or more, depending on the size of the laboratory.

One should figure on hiring a technician, or several part-time attendants, to supervise the laboratory during class hours. They would put on tapes as requested or instructed, rewind and file them, do most of the equipment handling, and make minor repairs.

Some administrators may think of assigning this work to the language teachers. There are three reasons why this would be penny wise and pound foolish. First, in all schools, the teachers are probably paid several times as much per hour as the technician would be. Second, a laboratory adds hours to the teacher's schedule because he has to spend time preparing lessons and recording them. The teacher is fortunate, indeed, if he can prepare and record a 50-minute class period in less than two hours. Giving the teacher the chance (if he wishes to avail himself of it) of being absent during the playing of the tape will forestall the question of extra pay for recording time. Third, experience shows that students will want to use the laboratory voluntarily in their free time. Eventually the laboratory will be in such demand that the language department will be swamped and a technician will have to be hired anyway.

What About Maintenance?

The last principal operating cost is repairs and replacement with provision for modernizing the installation as newer equipment models become available. Repairs, breakdowns, and wearing out depend a great deal on the original design and choice of equipment, another reason why expert advice is desirable during the original installation. Difficult as it is to plan a write-off policy, it would be most unwise not to plan on accumulating a reserve sufficient to replace all the equipment when it has become obsolete. This should be within a reasonably short time for this field is developing rapidly.

Allowing for all costs, however, it should be easy to pay maintenance, to allow for depreciation, and to make a yearly payment on the original cost from the revenue brought in by a modest laboratory fee. Incidentally, this revenue will exceed estimates, since the laboratory results in higher registrations in language courses. Often it draws to the school students who want the advantages of such a facility.

Class Planning

In my opinion, use of the language laboratory should never be optional; either a whole class uses it as part of its regular course, or none of the students use it: Where there are three periods weekly in language courses, it works well to make one a laboratory period.

Where there are four language periods, two may be in class and two in the laboratory. In the class before the laboratory, the professor explains the matter he will teach that week. In the laboratory, the class will be drilled in this matter. In the next following class, the professor will explain difficulties and correct mistakes.

Credits for Lab Periods

No clear policy has yet emerged on whether to count laboratories in language at half credit, as in sciences where two labs equal one credit point, or at par. There are good arguments for counting language laboratory periods at par. The halving of credit for science laboratories is mainly to allow for the time spent in setting up apparatus. In the language lab where the apparatus is much less complex, the technician can have machines ready to operate when the student enters the booth.

The administrator who finds that some members of his language staff do not want a laboratory may at once suspect that they are not keeping abreast of developments in their field. Experience shows, however, that if a lab is installed, teachers at first shy will sooner or later give it a try. Inevitably, they will in time become earnest and enthusiastic users—convinced mainly by the amazing progress made by their students.

A good deal of literature can be supplied for their guidance in preparing and recording exercises. Teachers might be sent to visit and observe in schools which have laboratories.

Recording the Tapes

One major problem will be the supply of tape recordings for the laboratory sessions. Ideally, members of the language staff would be both trained linguists and also native speakers or equivalently fluent, so that each professor could design and record his own tapes. In that way, a laboratory would be closely fitted to the classroom work. Even so, the preparation and recording would be a real burden. The teacher should at all times keep a whole semester ahead, recording during the summer all the tapes to be used in the fall. Needless to say, the majority of the language departments in the country will be a long time in reaching this ideal.

The next best procedure, then, would be to find good native speakers to read their respective languages onto the tape. These speakers could be exchange students who may be already on the campus. They should be paid a fee for their time, another item to make allowance for in the laboratory budget. The least that should be done with a laboratory is to enable language students to hear genuine French, German, or Spanish of native speakers, where it has not otherwise been available. If "live" native speakers are not available, laboratory work will probably have to be based on com-

mercially distributed recordings, utilizing their material as part of the classwork rather than vice versa.

Another solution would be for larger schools with all these facilities to lend or sell copies of their tapes to smaller schools. Some such exchange will probably be organized eventually when financing is available. Then there will be the pleasant prospect of students in the smallest schools sharing some of the educational benefits offered to students in the greatest institutions. The best educational resources of the country will be made available far beyond their home campuses. Such an exchange should, indeed, be a first step in a great period of progress for American education.

A Promise to All Education

The use of the electronic laboratory in teaching languages is only the first of many, indeed perhaps inumerable ways in which this equipment can improve education. To the farseeing administrator, the areas in which this tool can be used—perhaps with spectacular effect—offer almost limitless vistas. Here are the tools for teaching classical languages and Hebrew, for the correction of foreign accents, the improvement of speech and diction, music appreciation, teaching the reading of musical notation, and perhaps absolute pitch; the improvement of reading, training in telegraphic code, and so on *ad libitum,* if not *ad infinitum.*

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